A CASE TOOL FOR UML via META-MODELING APPROACH

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By

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Declaration

I certify that this thesis submitted for the degree of Masters is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for higher degree to any other university or institution.

Signed:.....

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Date:.....20.8.99.....

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ABSTRACT

The idea of automating software development process has come true with the new technology called Computer Aided Software Engineering (CASE). The main objective of this project is to develop a CASE tool for Unified Modeling Language (UML) by using the meta-modeling approach. Meta-modeling can be described as a process to define a conceptual model of a modeling technique. The CASE tool which has been developed in this project is called UMLCASE. The metaCASE tool called MetaEdit has been used in the meta-modeling. It provides a concept called OPRR (Object, Property, Role and Relationship) to define the notation, syntax and semantics of various techniques of UML. The OPRR is used to model these techniques and then generate into their method definition language. The compilation process is done to check the consistency of each technique. There are eight techniques of UML, namely the Use Case Diagram, Class Diagram, Sequence Diagram, Collaboration Diagram, State Diagram, Activity Diagram, Component Diagram and Deployment Diagram. These techniques of UML have also been extended into the higher version of MetaEdit which is called MetaEdit+ 2.5. This metaCASE tool provides the GOPRR (Graph, Object, Property, Role and Relationship) concepts. For this version of MetaEdit+, the model elements were designed separately and combined into one diagram by the Graph tool. MetaEdit+ provides the editors that help to manage and design the techniques. Furthermore, this project has proved the effectiveness of the meta-metamodeling approach in defining the meta-model of UML techniques.

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